

Motorola **HOME** Radio

S E R V I C E M A N U A L

MODEL 67L11

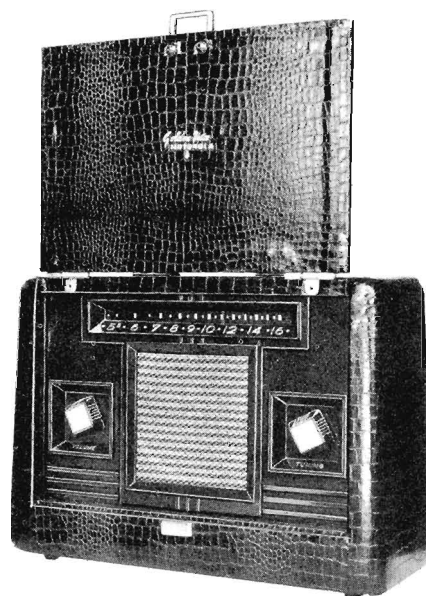
GENERAL INFORMATION

TYPE- 5 tube, three power portable, with a selenium rectifier for house current operation. Loop antenna is housed in detachable front cover.

TUNING RANGE - 535 to 1620 Kc

TUBE COMPLEMENT - 1U4 RF Amplifier
1R5 Osc-Mod.
1U4 IF Amplifier
1S5 Detector, AVC and 1st AF Amplifier
3V4 Power Amplifier

POWER SUPPLY - Operates from 117V AC or DC (15 watts), or self-contained battery pack. Use Eveready No. 754 or Ray-O-Vac No. AB-878 Battery Pack.



OPERATING INSTRUCTIONS

HOUSE CURRENT OPERATION. Remove power plug from receptacle on chassis base and plug into 117V AC or DC outlet. When operating from AC line, reversing the line cord plug may sometimes improve reception. If set does not play when plugged into a DC line, reverse line cord plug.

BATTERY OPERATION. Line cord must be plugged into receptacle on chassis base (located in right rear corner) or set will not play. Remove battery from case if receiver is to be out of service any length of time.

LOOP ANTENNA. Loop antenna is contained in detachable front cover and can be used on either front or back of set. Greatest pickup is obtained when loop is in up position, although for nearby stations satisfactory results may be had with loop down. For maximum performance, loop alignment should be checked when set is first placed in service. Proceed by operating set from battery, set volume to maximum, turn dial to weak station around 1400 Kc and adjust loop trimmer for maximum volume. See drawing for trimmer location.

MOTOROLA INC.

4545 W. Augusta Blvd.

PART NO. 54P471890 MW

Chicago 51, Illinois

PRINTED IN U.S.A.

ALIGNMENT

Maximum performance can only be obtained if extreme care is exercised during alignment. Follow the procedure carefully.

A low range output meter should be connected across the speaker voice coil. Set receiver volume control to maximum; for greatest accuracy keep output of receiver at approximately .05 watt throughout alignment by reducing generator output (not receiver volume control) as stages are brought into alignment. (.05 watt = .40 volt on output meter.) The alignment tool should be of an insulated type such as Motorola part number 66A71008.

If receiver is operated from AC line during alignment, it is suggested that an isolating transformer be used between receiver and power line. If no isolation transformer is used and hum is encountered during alignment, connect the ground side of the signal generator to B- instead of the receiver chassis.

Refer to Figure 1 for location of all adjustments.

Normally, alignment can be made with trimmers 5, 6 and 7. However, if range of these trimmers is insufficient to obtain peak, adjustment can be made with trimmers 5A, 6A and 7A.

R.F. COIL. The inductance of this coil is set at time of manufacture by adjusting the iron core. No resetting of this core should be made unless it has been tampered with. If so, readjustment can be made by proceeding as follows:

Tune in 600 Kc signal and peak Padder Adj. (8). Next tune in 1400 Kc signal and peak trimmer (6). Repeat both adjustments until maximum response is obtained at both ends; the last adjustment should be trimmer (6).

STEP	DIAL SET TO	DUMMY	SIGNAL GENERATOR CONNECTED TO	SIGNAL GENERATOR SET TO	ADJUST TRIMMER OR CORE	REMARKS
IF ALIGNMENT 1.	Gang fully opened.	.1 mf	OSC-MOD grid*	455 Kc	1,2,3 & 4	Adjust for maximum output
RF ALIGNMENT 2.	1600 Kc**	-	Radiation loop***	1600 Kc	5	This sets osc. to dial scale.
3.	1400 Kc	-	Radiation loop***	1400 Kc	6 & 7	Tune signal for max. with receiver tuning knob, then peak trimmers 6 & 7.
4.	1400 Kc	-	Radiation loop***	1400 Kc	7	With chassis assembled into cabinet, repeak antenna trimmer. Loop should be in upright position.

* A convenient point is the stator of the tuning capacitor.

** Close gang fully and set pointer to calibration mark at left hand side of dial background, then set to 1600 Kc by setting pointer at right hand calibration mark.

*** Connect output of signal generator to a 5" diameter, 3 turn loop and bring loop close enough to receiver loop to obtain output of 50 milliwatts (.40V) on output meter. Vary distance between loops to maintain this output during alignment. Minimum distance between loops should never be less than 12".

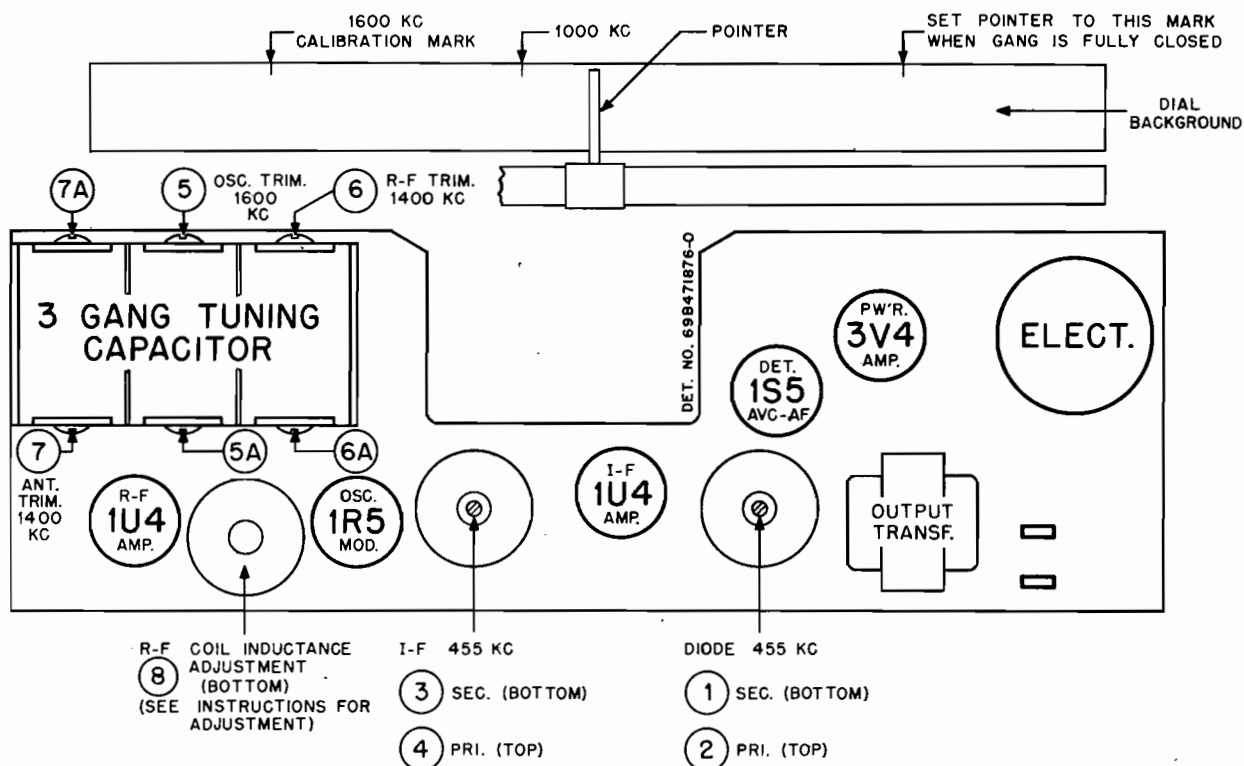


FIGURE 1. TUBE AND TRIMMER LOCATIONS

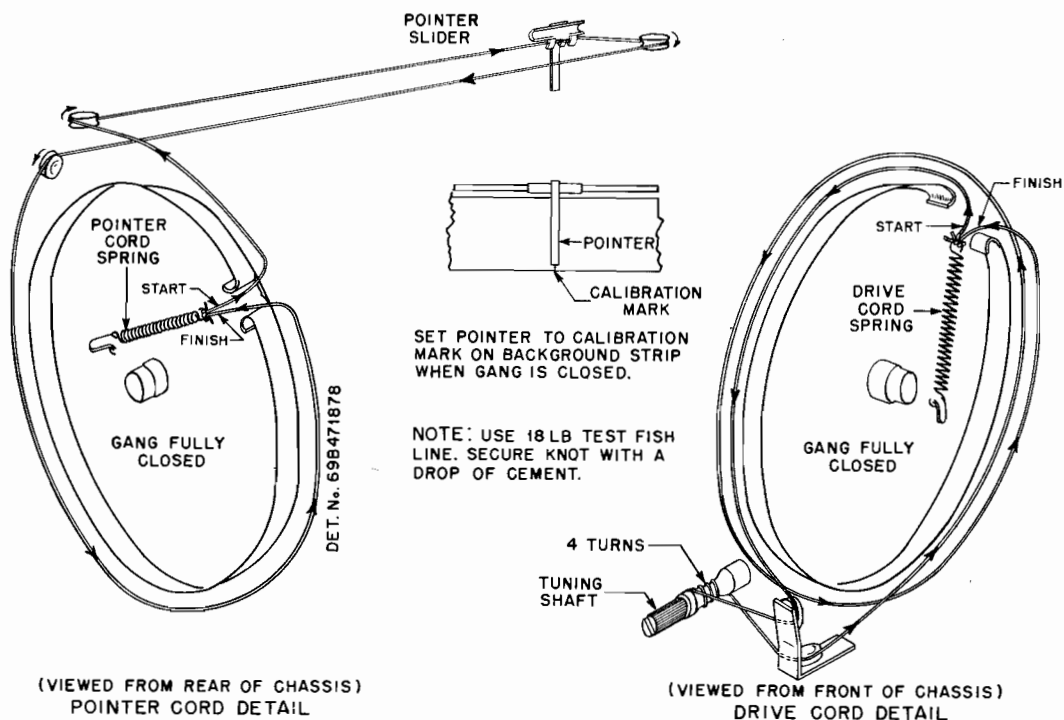


FIGURE 2. RESTRINGING DETAIL

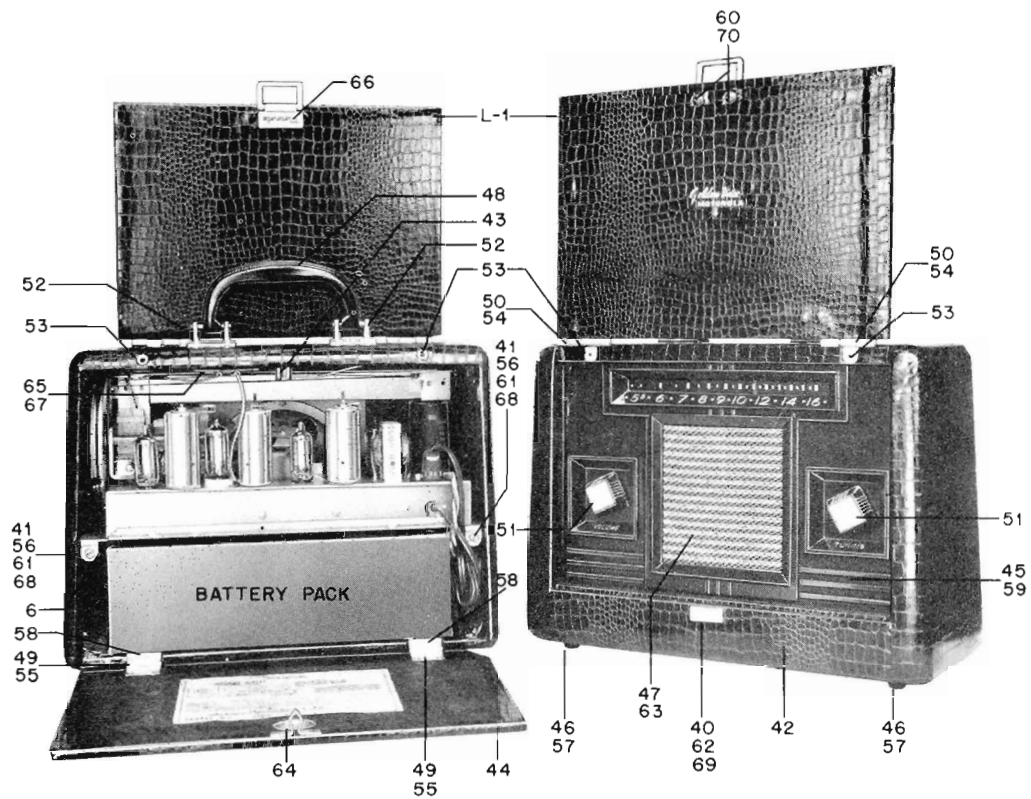


FIGURE 3. CABINET PARTS LOCATIONS

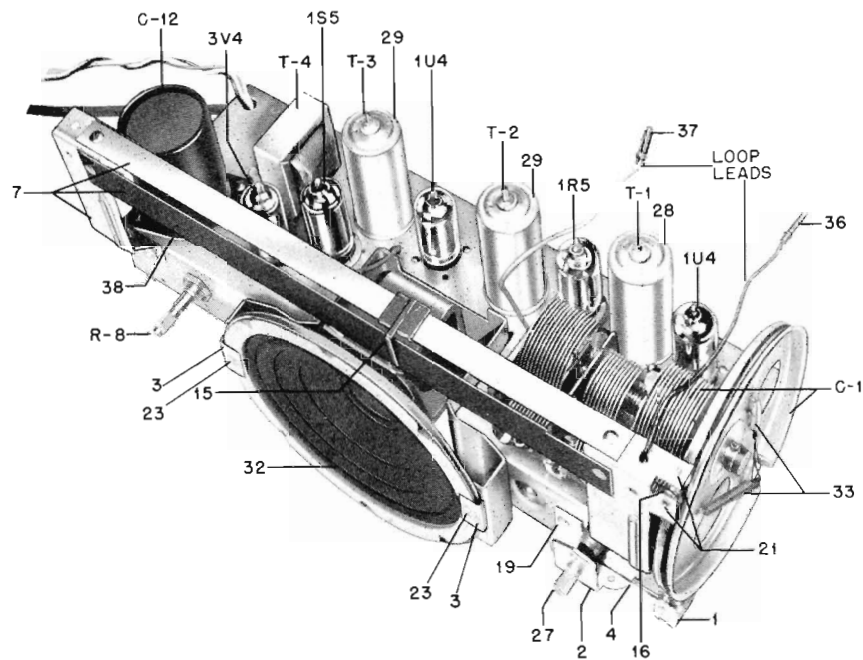


FIGURE 4. CHASSIS PARTS LOCATIONS - TOP VIEW



5

FIGURE 7. SCHEMATIC DIAGRAM

REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	LIST PRICE	REF. NO.	PART NO.	DESCRIPTION	LIST PRICE
CHASSIS PARTS							
CAPACITORS							
C-1	1X77283	Variable, 3 gang: includes pulley	6.10	R-7	6R5585	8.2 meg 10% 1/2W	1.00
C-2	8S9805	Paper: .05 mf 100V	.20	R-8	18A76948	Volume control: 1 meg; with DPST Switch..	1.20
C-3	21R6848	Mica: 250 mmf 500V	.25	R-9	17A76986	Wirewound: 150 10% 2-1/2W	.30
C-4	8S9805	Paper: .05 mf 100V	.20	R-10	17K75249	Wirewound: 2060 5% 5W	.75
C-5	21K77288	Molded 3.3 mmf	.10	R-11	6R3987	6.8 meg 1/2W	1.00
C-6	8S9805	Paper: .05 mf 100V	.20	R-12	6R2118	3.3 meg 1/2W	1.00
C-7	8S9805	Paper: .05 mf 100V	.20	R-13	6R6289	820 10% 1/2W	1.00
C-8	8S9806	Paper: .1 mf 200V	.25	R-14	6R6004	1 meg 1/2W	1.00
C-9	6R641	Mica: 100 mmf 500V	.20	R-15	6R3927	2.2 meg 1/2W	1.00
C-10	8S9813	Paper: .005 mf 600V	.20	R-16	6R2088	250 10% 1/2W	1.00
C-11	8S9816	Paper: .05 mf 400V	.20	R-17	6R5632	500 10% 1/2W	1.00
C-12	23K76985	Electrolytic: 40-40-20-80 mfd. (includes black fibre cover)	1.60	R-18	6R5621	10 10% 1/2W	1.00
C-13	8S9805	Paper: .05 mf 100V	.20	R-19	6R6015	220,000 1/2W	1.00
C-14	8S9805	Paper: .05 mf 100V	.20	SWITCHES			
C-15	21B77286	Ceramic: 100 mmf 500V	.20	S-1	40A27114	Switch, changeover: triple pole, double throw	.75
C-16	8S9813	Paper: .005 600V	.20	TRANSFORMERS			
C-17	8S9824	Paper: .002 mf 400V	.20	T-1	24B76988	RF: broadcast band; complete with iron tuning core and C-5 (3.3 mmf)	1.70
C-18	21B77287	Molded: 1.5 mmf	.10	T-2	24B76990	IF: 455 Kc; complete with iron tuning cores and padding capacitors, but less shield	1.70
C-19	8S9805	Paper: .05 100V	.20	T-3	24B77284	Diode: 455 Kc; complete with iron tuning cores and padding capacitors but less shield	1.70
CAPACITOR & CHOKE ASSEMBLY							
E-1	1A72283	Capacitor and Choke Assembly (includes .15 mf 200V paper capacitor and coil)...	.55	T-4	25B76952	Output	1.60
RECTIFIER							
E-2	48B70938	Rectifier, selenium	1.60	COILS			
L-1	15C77034	Loop & Cover Assembly: includes front cover, loop, catch & hinges	3.90	1	71X477010	Bracket & Pulley Assembly (cord guide)...	.20
L-2	24A76943	Oscillator	.85	2	7A14684	Bracket, tuning shaft mtg	.10
RESISTORS							
Note: All resistors 20% insulated carbon type unless specified otherwise.							
R-1	6R2118	3.3 meg 1/2W	1.00	3	7A76939	Bracket, speaker mtg. plate	.05
R-2	6R3927	2.2 meg 1/2W	1.00	4	11M8944	Cord, dial: 18# black	.10
R-3	6R3988	5.6 meg 10% 1/2W	1.00	5	30B20329	Cord: 6 ft. line cord with plug	.70
R-4	6R6004	1 meg 1/2W	1.00	6	15C76954	Cover, chassis bottom	.40
R-5	6R6075	100,000 1/2W	1.00	7	1X77281	Dial Background, Rail and Bracket Assembly: includes pointer, slider & pulleys	1.60
R-6	6R6012	33,000 1/2W	1.00	8	5A19658	Eyelet, spacer (gang mtg)	.20
				9	5A70404	Grommet, rubber (gang mtg)	.60
				10	32A24815	Lock, line cord; fibre	.25
				11	4S7650	Lockwasher, steel: #6 internal; cadmium plated (rectifier mtg)	.50
				12	2S7002	Nut, steel: 6-32 x 5/16 hex; cadmium plated (rectifier mtg)	.50

REF. NO.	PART NO.	DESCRIPTION	LIST PRICE	REF. NO.	PART NO.	DESCRIPTION	LIST PRICE
13	287051	Nut, steel; 3/8-32 x 9/16 hex; palnut; cadmium plated (volume control mtg)doz	.15	43	55A77003	Catch, strike (rear panel)doz	.65
14	28K77272	Plug, 9 pin (on battery cable)doz	.15	44	16K478048	Cover & Hinge Assembly: rear coverdoz	1.75
15	1K76949	Pointer and Slider Assemblydoz	.20	45	13D470217	Escutcheon, front panel: plastic; includes dial crystaldoz	4.25
16	49A12646	Pulley, drive cord guidedoz	.30	46	37A16614	Foot, rubberdoz	.25
17	5S8497	Rivet: .088 x 1/2; nickel plated (tube socket mtg)per/c	.50	47	35B471002	Grille Cloth and Speaker Baffle Assemblydoz	1.20
18	5S7707	Rivet: .122 x 5/32; nickel plated (terminal strip mtg)per/c	.50	48	55B71030	Handle, carrying: moldeddoz	.50
19	5S7701	Rivet: .122 x 3/16; nickel plated (electrolytic mtg & tuning shaft mtg)per/c	.50	49	55A77005	Hinge, brass (rear panel)doz	.10
20	5S7708	Rivet: .122 x 9/32; nickel plated (line cord lock mtg)per/c	.50	50	55A77049	Hinge and Pin, brass (front cover)doz	.70
21	5A71246	Rivet, shoulder: .187" lg (pulley mtg)....doz	.15	51	36A470823	Knob, control: volume and tuningdoz	.30
22	5A13896	Rivet, shoulder: .312" lg (pulley mtg)....doz	.15	52	55K77281	Post and Bottom Plate; brass (carrying handle mtg)doz	.40
23	3S2974	Screw: 4-40 x 5/16 flat Phillips head; cadmium plated (speaker mtg)doz	.15	53	1A71296	Receptacle and Eyelet Assembly (loop receptacle)doz	.20
24	3S7506	Screw: #6 x 1/4 PKZ plain hex head; cadmium plated (slider switch mtg and dial background mtg)per/c	.50	54	5S7701	Rivet, steel: .122 x 3/16; nickel plated (front panel hinge mtg)per/c	.50
25	3S2294	Screw: 6-32 x 1/2 plain hex head, locking type machine screw; cadmium plated (gang mtg)doz	.15	55	5S8479	Rivet: .122 x 9/32; nickel plated (rear panel hinge mtg)per/c	.50
26	3S9683	Screw: 6-32 x 1-1/8 slotted round head machine screw; cadmium plated (rectifier mtg)doz	.20	56	5S8812	Rivet: .122 x 7/16; nickel plated (chassis mtg, bracket mtg)per/c	.50
27	47A76837	Shaft, tuning controldoz	.15	57	5S7737	Rivet: .122 x 1/2 split; nickel plated (rubber foot mtg)per/c	.50
28	26B70107	Shield, (RF coil)doz	.20	58	5S2805	Rivet: .122 x 1/2; nickel plated (rear panel hinge mtg)per/c	.50
29	1A71049	Shield and Sleeve Assembly (IF and Diode shield can)doz	.30	59	3S3369	Screw: #6 x 3/8 PKA slotted hex head wood screw; antique copper finish (escutcheon mtg)per/c	.50
30	9A77086	Socket, tube: miniature; 7 prong; cushioned	.40	60	3S2978	Screw: 6-32 x 1/2 slotted oval head; black nickel plated (front panel top catch mtg)per/c	.50
31	9A70455	Socket, tube: miniature; 7 prong plain...	.20	61	3S2979	Screw: 6-32 x 3/8 slotted hex head machine screw; cadmium plated	.50
32	50C76953	Speaker, PM: 5"; 3.2 ohms V.C.doz	4.05	62	3S7239	Screw: 8-32 x 1 plain hex head machine screw; cadmium plated (front cover bottom catch mtg)per/c	.50
33	41A14244	Spring, tension coildoz	.55	63	3S7999	Speednut, baffle mtgdoz	.50
34	31A84795	Strip, terminal: 2 insulated lugs, 1 mtg.	.05	64	55A76999	Strike, rear panel: cadmium plateddoz	.50
35	31A76836	Strip, terminal: 3 insulated lugs, 1 mtg.	.10	65	31K77361	Strip, terminal: 2 receptacledoz	.10
36	29A5400	Terminal, plain pin: .125 diam.doz	.20	66	1X77283	Top Catch Assembly, brass: front cover...	1.70
37	29K5401	Terminal, plain pin: .156 diam.doz	.20	67	4A13240	Washer, fibre (terminal strip mtg)per/c	.50
38	9A22056	Wafer, bakelite (electrolytic mtg)doz	.70	68	4S7569	Washer: 5/16 x .045 x .007; cadmium plated (chassis mtg, bracket mtg)per/c	.50
39	4S1719	Washer, steel: 3/8 x .140 x .030; nickel plated (line cord lock mtg)per/c	.50	69	4S7566	Washer: 3/8 x 5/32 x .033; cadmium plated (front cover bottom catch mtg)per/c	.50
CABINET PARTS				70	4S1782	Washer: 3/8 x .140 x .030; nickel plated (front cover top catch mtg)per/c	.50
40	46B77059	Block, brass (front cover bottom catch).	.45				
41	7A76832	Bracket, chassis mtg.doz	.35				
42	1X77364	Cabinet (67L11): complete, but less plastic escutcheon, grille and loop antenna....	—				

PRICES SUBJECT TO CHANGE WITHOUT NOTICE